

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 035ADTD4063(2)	<div style="display: flex; justify-content: space-between;"> FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) </div>	
International application No. PCT/GB 99/ 02468	International filing date (day/month/year) 28/07/1999	Priority date (day/month/year) 29/07/1998
International Patent Classification (IPC) or national classification and IPC C01B37/08		
Applicant EXXON CHEMICAL PATENTS, INC. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This **REPORT** consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
 These annexes consists of a total of / sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the report
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 16/02/2000	Date of completion of this report 29. 09. 00
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I. Basis of the report

1. This report has been drawn up on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*

☒ the international application as originally filed

☐ the description, pages

, as originally filed

pages

, filed with the demand

pages

, filed with the letter of

☐ the claims, Nos.

, as originally filed

Nos.

, as amended under Article 19

Nos.

, filed with the demand

Nos.

, filed with the letter of

☐ the drawings, sheets / fig.

, as originally filed

sheets / fig.

, filed with the demand

sheets / fig.

, filed with the letter of

2. The amendments have resulted in the cancellation of:

☐ the description, pages:

☐ the claims, Nos.

☐ the drawings, sheets / fig.

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2 (c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Claims	1-24	YES
	Claims		NO
Inventive Step	Claims	1-24	YES
	Claims		NO
Industrial Applicability	Claims	1-24	YES
	Claims		NO

2. Citations and Explanations

1. D1 (WO 98/16469) relates to the synthesis of large crystal zeolite and the process it discloses on page 5, line 14 - page 6, line 5 is *expressis verbis* said to be effective in producing any known zeolite type (page 6, lines 7-8). The LEV structure type is explicitly disclosed (page 6, line 28).

Moreover, it is suggested to use seeds (page 11, lines 4-5), but it is true that the use of colloidal seeds is not explicitly disclosed. Furthermore, in all examples an MFI type zeolite is produced, using MFI seeds (see also page 12, lines 6-10).

Moreover, the applicant states that colloidal seed manufacturing methods effective for many structure types have failed to produce seeds for certain other structure types, notably LEV and that there is in fact no known general method for making colloidal crystals from any known structure type.

Actually, as far as D1 is concerned, there is no disclosure of LEV seeds in any form, of a process for their manufacture, or of a synthesis using LEV seeds, there are no examples using or producing a LEV zeolite.

2. U.S. Patent No. 4 495 303,(D2) describes the manufacture of a LEV structure type zeolite, ZSM-45, using an organic template, and mentions the use of seed crystals of unspecified size at column 3, lines 56 to 59, but the examples do not use seeds. There is no disclosure of colloidal LEV, of a process for its manufacture, or of a synthesis using colloidal LEV seeds.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

3. EP-A-107 370, (D3) the basic ZSM-45 patent, mentions the use of seeds of unspecified nature and size in ZSM-45 manufacture, at page 6, lines 24 to 27, but does not use seeds in the examples. There is no disclosure of colloidal LEV, of a process for its manufacture, or of a synthesis using colloidal LEV seeds.

4. Accordingly, the cited prior art does not suggest or teach the preparation of colloidal LEV crystals. *A fortiori*, it contains no teaching of the composition of matter the subject of claim 1, or of the various uses of that novel composition of matter.

This analysis of the prior art literature is in line with the applicant's contention that until the present application, colloidal suspensions of LEV structure type zeolites did not exist and that there was no known way of obtaining the same.

5. Therefore, claims 1-24 are regarded as being novel and inventive.